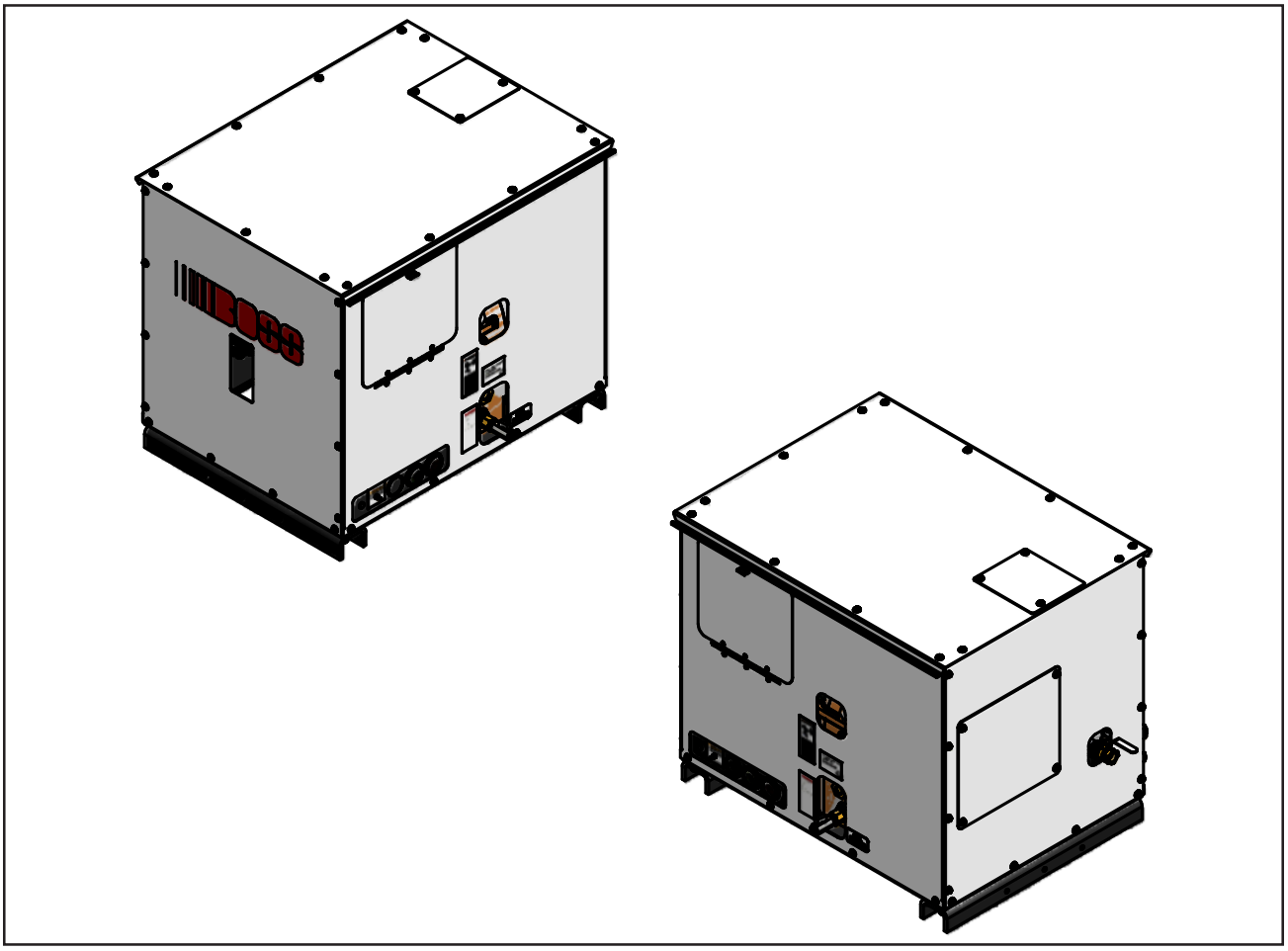
Service and Maintenance User Manual

80201 AHBI Hydraulically Driven Air Compressor



This manual must be read carefully before using your Boss Industries, Inc. Air Compressor. Store in a safe and convenient location for future reference.

For technical support:

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08/13/2014 KWB

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Manual Change History

1.1 Revision List

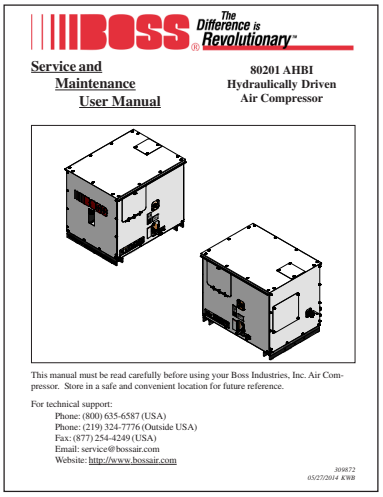
DATE	LOCATION	DESCRIPTION OF CHANGE	INITIALS

Welcome

2.1 General Information

Thank you for choosing the Boss Industries, Inc. 80201 AHBI Air Compressor. Before operating this compressor, carefully read this manual and become well acquainted with your new machine. Doing this will increase your safety and maximize the life of the machine.

While this manual is written to be as accurate as possible, Boss Industries, Inc. strives to continually improve the efficiency and performance of its machines. As a result, sometimes there may be slight differences between a given version of the manual and the machine.


BOSS The Difference is Revolutionary™

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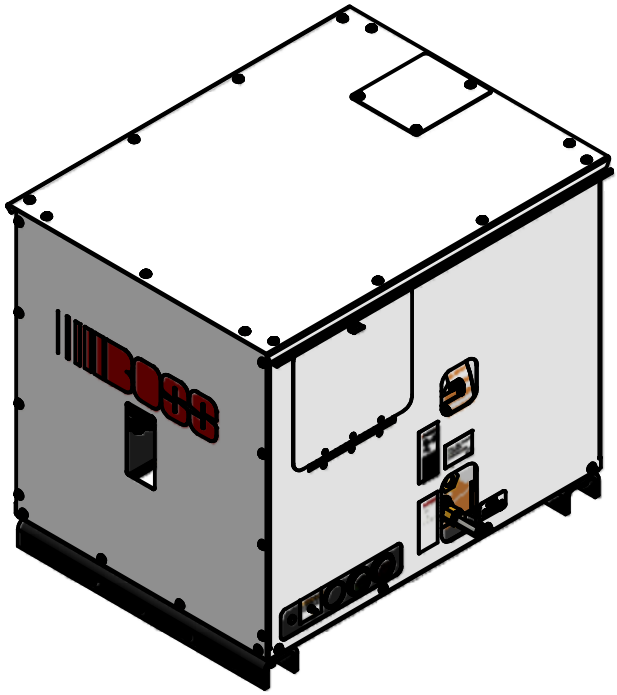
2.2 Overview

The Boss Industries, Inc. 80201 AHBI is a compact, strategically designed system. It integrates all major components on a single frame, which is enclosed in a tough, weather-resistant aluminum canopy.



The 80201 AHBI design provides output of up to 185 CFM (cubic feet of air per minute) at up to a maximum of 110 PSI (pounds per square inch). Three maintenance doors make virtually all components accessible for maintenance and service. Instrumentation clearly displays temperature, pressure, and hours of operation. Other features, including a spin-on compressor oil filter, and a spin-on coalescer element, reduce the time and costs associated with routine maintenance.

The 80201 AHBI also has enhanced safety features to protect your valuable resources: minimum pressure valve, high compressor oil temperature shutdown, high compressor pressure shutdown, automatic blowdown device, pressure relief valve, and clearly displayed warning/information decals.

Safety

3.1 General Safety Overview

IMPORTANT: READ BEFORE OPERATING EQUIPMENT

Remember, safety is basically common sense. While there are standard safety rules, each situation has its own peculiarities that cannot always be covered by rules. Therefore with your experience and common sense, you are in a position to ensure the safety of yourself and those around you. Lack of attention to safety can result in: accidents, personal injury, reduction in efficiency, and worst of all – Loss of Life. Watch for safety hazards and correct them promptly.

Understanding the proper operation of this equipment is critical to its safe operation. The owner, lessor, or operator of this equipment is hereby notified and forewarned that any failure to observe the safety and operating guidelines may result in injury and/or damage. Boss Industries, Inc. expressly disclaims responsibility or liability for any injury or damage caused by failure to observe these specified precautions or by failure to exercise the ordinary caution and due care required while operating or handling this equipment, even though not expressly specified.

In addition to following these safety guidelines, the operator should follow any company specific guidelines and procedures. Consult your immediate supervisor for specific company safety guidelines and/or procedures.

The following safety symbols are used throughout the manual to draw attention to important information. If the information is not carefully read and the instructions are not followed, severe injury, death, and/or damage to property and equipment may occur.

Indicate[s] an imminently hazardous situation, which, if not avoided, **will** result in death or serious injury.

Indicate[s] a potentially hazardous situation, which, if not avoided, **could** result in death or serious injury.

Indicate[s] a potentially hazardous situation, which, if not avoided, **could** result in minor or moderate injury.

Indicate[s] a potentially unsafe situation or practice, which, if not avoided can result in property and/or equipment damage only.

Safety

3.2 Safety Precautions

The following safety precautions are a general guide to safe operation of the equipment.

⚠WARNING

Read and understand the operations manual and all other safety instructions before using this equipment. Failure to follow operating instructions and/or failure to follow maintenance procedures and intervals could result in personal injury, death, and/or damage to equipment and property.

⚠DANGER

Pressurized System. Do not attempt to remove any compressor parts without first completely relieving entire system of pressure. Do not attempt to service any part of the equipment while in operation. Never attempt to repair or modify any pressure vessel or device.

⚠DANGER

System contains hot oil. The compressor system must be shut off prior to servicing. Open the service valve to ensure complete relief of system air pressure and stored energy. Then permit system to cool down prior to adding compressor oil or servicing the unit.

⚠DANGER

Do not use air from this compressor for breathing or food processing. Air from this compressor will cause severe injury if used for breathing or food processing.

⚠DANGER

The compressor is designed to compress air only. Do not attempt to compress other gases. Compression of other gases may create a situation where an explosion or fire may occur.

⚠DANGER

Do not use flammable solvents for cleaning compressor parts as this can cause the unit to ignite or explode during operation. Keep combustibles out of and away from compressor inlet, and any associated enclosures.

3.2 Safety Precautions (continued)

DANGER Never disable, override, or remove safeties, either temporarily or permanently.

DANGER Connect air hoses only in full compliance with O.S.H.A. Standard 29 CFR 1926:302 (b) (7). The required safety devices (velocity fuses) should be tested in accordance with their manufacturer's recommendations to verify that they reduce pressure in case of hose failure and will not nuisance trip with the hose and tool combinations in use. Failure to comply could result in personal injury or death and/or damage to equipment and property.

DANGER Never leave the machine running unattended or leave a tool connected to an air hose when not using. Relieve system of all stored air pressure after use.

DANGER Using a compressor in an enclosed area, WILL KILL YOU. Engine exhaust contains carbon monoxide. This is a poison you cannot see or smell. Contact manufacturer for body mounting recommendations.

WARNING Never adjust the pressure switch to a setting of greater than 150 PSI. Operating the compressor at greater than 150 PSI may result in personal injury and property damage.

CAUTION Mount the compressor in a stable location capable of supporting 600 lbs. Slight vibration may occur during operation and the machine may move if not securely mounted.

CAUTION When using tools, maintain secure footing at all times. Do not overreach or awkwardly use air tools.

NOTICE Use only Boss Industries, Inc. approved replacement parts or equivalent.

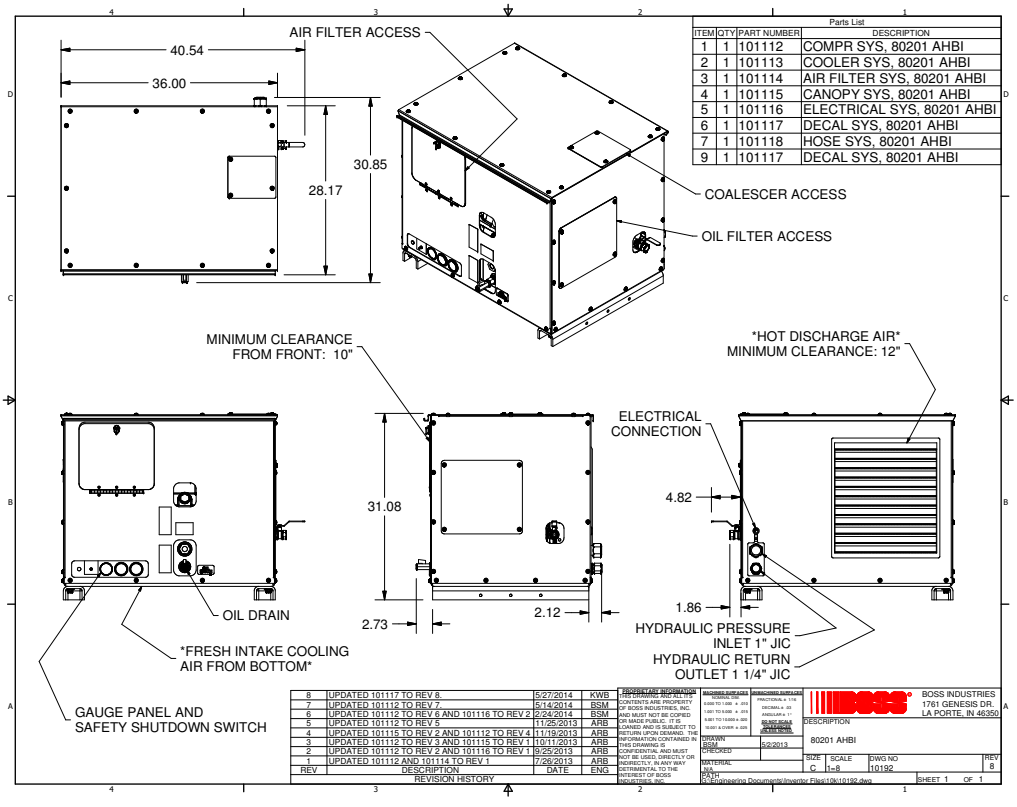
Specifications

4.1 Specification Sheet

COMPRESSOR SPECIFICATIONS			
Model	80201 AHBI		
Type	Oil-flooded Rotary Screw		
Delivery	Hydraulic Flow @ 2200 PSI (GPM)	Input RPM	CFM Output
	20.5	1010	85
	24.4	1200	100
	29.4	1450	125
	38.0	1875	160
	43.8	2160	185
Operating Pressure Range	80 - 110 PSIG		
Ambient Operating Temperature Range	-20° - 110°F		
Oil Capacity (Compressor)	3 gallons		
Air Service Connection	3/4" NPT		
Overall Dimensions	36" x 28" x 31"		
Weight (Wet)	700 lbs		

*CALCULATIONS PERFORMED @ 85% EFFICIENCY MECHANICAL AND 96% EFFICIENCY VOLUMETRIC.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE


AIR FILTER ACCESS
40.54
36.00
30.85
28.17
COALESCER ACCESS
OIL FILTER ACCESS
MINIMUM CLEARANCE FROM FRONT: 10"
HOT DISCHARGE AIR MINIMUM CLEARANCE: 12"
ELECTRICAL CONNECTION
31.08
4.82
OIL DRAIN
2.73
2.12
1.86
FRESH INTAKE COOLING AIR FROM BOTTOM
HYDRAULIC PRESSURE INLET 1" JIC
HYDRAULIC RETURN OUTLET 1 1/4" JIC
GAUGE PANEL AND SAFETY SHUTDOWN SWITCH
Parts List
ITEM QTY PART NUMBER DESCRIPTION
1 1 101112 COMPR SYS, 80201 AHBI
2 1 101113 COOLER SYS, 80201 AHBI
3 1 101114 AIR FILTER SYS, 80201 AHBI
4 1 101115 CANOPY SYS, 80201 AHBI
5 1 101116 ELECTRICAL SYS, 80201 AHBI
6 1 101117 DECAL SYS, 80201 AHBI
7 1 101118 HOSE SYS, 80201 AHBI
9 1 101117 DECAL SYS, 80201 AHBI
REVISION HISTORY
REV DESCRIPTION DATE ENG
8 UPDATED 101117 TO REV 8. 5/27/2014 KWB
7 UPDATED 101112 TO REV 7. 5/14/2014 BSM
6 UPDATED 101112 TO REV 6 AND 101116 TO REV 2 2/24/2014 BSM
5 UPDATED 101112 TO REV 5. 11/25/2013 ARB
4 UPDATED 101115 TO REV 2 AND 101112 TO REV 4 11/19/2013 ARB
3 UPDATED 101112 TO REV 3 AND 101115 TO REV 1 10/11/2013 ARB
2 UPDATED 101112 TO REV 2 AND 101116 TO REV 1 9/25/2013 ARB
1 UPDATED 101112 AND 101114 TO REV 1 7/26/2013 ARB
BOSS INDUSTRIES
1761 GENESIS DR.
LA PORTE, IN 46350
80201 AHBI
SIZE C
SCALE 1=8
DWG NO 10192
REV B
SHEET 1 OF 1

Description of Components

5.1 Compressor Airend

The Boss Industries, Inc. compressor airend is a positive displacement, oil flooded, rotary screw type unit employing one stage of compression to achieve the desired operating pressure. In operation, two helically grooved rotors mesh to compress air. Intake air is trapped as the male lobes roll down the female grooves, pushing trapped air along, compressing it until it reaches the discharge port in the end of the stator. This delivers smooth-flowing, pulse-free air.

The oil in a rotary screw airend serves three purposes:

- Lubricates the rotating parts and bearings.
- Serves as a cooling agent to remove the heat from compression.
- Seals the running clearances.

The airend supplied with the 80201 AHBI is an integrated type, which means the oil reservoir and many other components are all integrated into the airend casting design.

5.2 Drive System

Hydraulic power turns a hydraulic gear motor that is mounted to the front of the compressor airend. There is a shaft-to-shaft coupling that transfers this power to the compressor input shaft. An internal gear set provides higher speeds to the compressor male rotor for increased output with conservative hydraulic requirements. Hydraulic bulkhead fittings are provided for easily interfacing an existing hydraulic system.

5.3 Coalescer Element

The coalescer element is a spin-on canister style filter that removes the oil mist from the air as it is passed on to the minimum pressure valve. As the air/oil mist passes through the outside of the media, oil gathers on the interior walls and settles to the bottom of the element. Collected oil is returned to the compressor airend through the oil return line. The coalescer will filter the oil concentration in the air to less than 3 parts per million.

5.4 Pressure Relief Valve

This valve vents sump tank pressure to atmosphere should the pressure inside the tank exceed 220 PSI.

5.5 Compressor Air Filter

The compressor air filter is a two stage dry type intake filter with a gravity evacuator and replaceable internal element. On the outlet of the compressor air filter is an air filter restriction indicator. This indicator serves as a maintenance tool.

5.6 Compressor Oil Filter

The compressor oil filter is a spin-on type 25 micron filter located on the rear of the airend. Located in the same block as the oil filter, is a thermal valve which allows the compressor oil to heat up before being directed to the oil cooler. The oil travels through the oil filter and then based on temperature, either goes to the oil cooler or is returned directly to the airend sump.

5.7 Compressor Oil Cooler

The compressor oil cooler is designed to dissipate the heat created during the compression of air. The compressor oil flows through the tubes of the cooler transferring heat to the air that flows over the fins.

Installation & Operation

6.1 System Installation Overview

This air compressor should be installed only by those who have been trained and delegated to do so and who have read and understand the manual. Failure to follow the instructions, procedures, and safety precautions in this manual may result in accidents and injuries.

Install, use, and operate this air compressor only in full compliance with all pertinent O.S.H.A., Federal, State, and Local codes or requirements in addition to any company's regulations.

Do not modify this compressor except with written factory approval.

6.2 Mounting the Compressor

When mounting the compressor, care should be taken to ensure that its location does not impede the operation of other components on the vehicle. For example, if your vehicle is equipped with a crane, you must make sure the compressor will not interfere with the swing of the crane. In addition, the compressor should be installed in an area that permits cool ambient air to enter the air filter and the hot air to exhaust without recirculating into the machine. A minimum of 12" of clearance is needed for the hot discharge air from the cooler. A minimum of 10" of clearance is required from the front of the compressor to allow for proper air intake. Cool ambient air is drawn in from below the machine. One last consideration in the mounting should be the routing of hydraulic hoses. Be sure these can be safely run to the bulkhead fittings on the machine. The unit should be secured to the vehicle with four 1/2" grade 8 bolts, washers, and nyloc nuts. Ensure that you have a sub structure that will support the weight of the compressor. Be sure to follow all National Vehicle Safety Standards.

6.3 Installation of Air Storage Tanks

This Rotary screw air compressor system is designed to provide continuous volume and constant pressure without the use of an air storage tank. Within a few seconds of engagement, the compressor will produce full volume and pressure needed to run corresponding air operated equipment without waiting for air tanks to fill.

Air storage tanks are not utilized as standard equipment on vehicle mounted rotary screw compressors. The installation of air storage tanks, if not done properly, will hinder the performance of the rotary screw compressor. Boss Industries, Inc. strongly discourages the use of an air storage tank as standard equipment for vehicle mounted rotary screw air compressors.

In the rare event air usage is required without operating the vehicle, an air storage tank can be added to your system. When adding an air storage tank, be sure to follow all state and federal DOT regulations regarding air storage tank usage.

Installation & Operation

6.4 Installation of Wiring

This unit is shipped from the factory with all necessary internal wiring installed. The only remaining wiring necessary is the wiring needed to interface your vehicle/power source with the Boss compressor. The unit is shipped with 1 end of a 6 pin connector. They need to be connected as follows:

Pin A) Battery Power

Pin B) Battery Ground

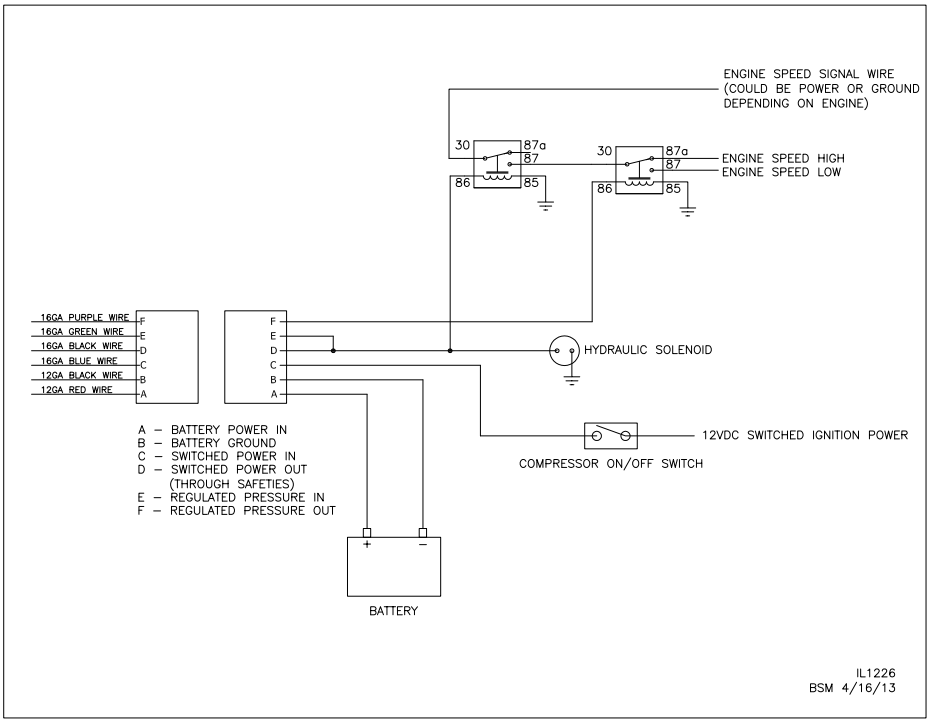
Pin C) 12vdc switch power for operation

Pin D) Power Out to hydraulic system solenoid through safeties

Pin E) Regulated Pressure Signal In

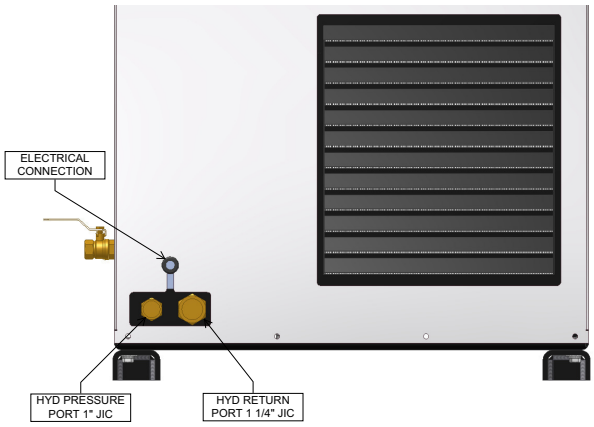
Pin F) Regulated Pressure Signal Out

Pin 'D' should be used to direct hydraulic flow to the compressor. This wire can also be used with a relay to signal the engine speed to increase if additional hydraulic flow is required during compressor operation. The regulated pressure signal wires are used in conjunction with a 2-speed system for engine speed control. The regulated pressure signal 'In' wire should be connected to a signal wire. This may be a power or ground. In the example below, this wire is connected to pin 'D' for switched power through the compressor safeties. This signal will be returned on the regulated pressure signal "Out" wire when your regulated pressure switch is closed. To put this another way, pin 'E' is connected to pin 'F' when air supply is exceeding air demand, and this can be used to tell your engine to slow down. This circuit has a 5 Amp maximum rating.



6.5 Connecting the Hydraulic Hoses

The hydraulic hoses to the compressor should be connected directly to the bulkhead fittings. The input line on the left should be made from a good quality high pressure (min. 3000 PSI) hydraulic hose 1" i.d. The return line on the right can be made from a medium pressure (min 1500 psi) hydraulic hose 1 1/4" i.d. Care should be taken to see that the hoses are not installed with kinks or bends that inhibit flow of the hydraulic oil. Lack of flow could result in damage to the motor and compressor. Lastly, check to make sure hoses are not in contact with sharp objects or edges that may fray, chafe, or cut them over time. Secure all hoses with tie down straps or clamps.



6.6 Pre-Start-up Inspection Checks

This inspection should be done prior to the compressor test.

I. Check all assemblies, clamps, fittings, hose connections, nuts, and bolts to ensure they are properly tied and secured to the vehicle. This is a very critical area of inspection. The vehicle should not be moved until this inspection has been completed.
II. Remove all tools, rags, and installation equipment from the area.
III. Check compressor oil level. Check all valves to ensure they are in correct operating position.
IV. Vacuum all areas that have metal or plastic shavings. Wipe all fingerprints off unit and vehicle.

6.7 Check all fluid levels

Position the unit on a level surface so that proper amount of fluids can be added.

.

I. Check the compressor oil level.
   A. Add oil if needed.
   B. Additional oil may need to be added after test.
   C. Top off oil level to half the sightglass when finished with the test.
II. Check hydraulic system oil level.

6.8 Machine Documentation

Record all serial numbers for this installation.

A. Boss Industries, Inc. Serial Number

_____

B. Compressor Serial Number

_____

C. Note any special applications relating to specific installations.

_____

6.9 Operating Procedure

I. Read this manual carefully before proceeding.
II. Verify the service valve is closed.
III. Engage hydraulic system.
IV. Allow hydraulic system to run on bypass for 3-5 minutes to warm-up.
V. Engage hydraulic flow to compressor.
VI. Allow compressor speed to stabilize before opening service valve for use.

6.10 Shutdown Procedure

I. Close service valve.
II. If equipped for a 2-speed system, allow engine speed to throttle down to low speed.
III. Disengage hydraulic flow to compressor.
IV. Disengage hydraulic system.

6.11 Safety Circuit Testing

To perform safety circuit testing, follow the operating procedure in section 6.9 above. Use a screwdriver or other metal object to touch the 1/16" allen head screw on the face of the temperature gauge and simultaneously touch the outside ring on the face of the gauge. This should shut off power to the solenoid of the hydraulics. Push the button in on the shutdown switch to reset. Repeat the test with the pressure gauge. If the solenoid does not stop flow to the compressor, check wiring.

6.12 Operating Conditions

The following conditions should exist for maximum performance of the compressor. The machine should be as close to level as possible when operating. Operation in ambient temperatures above 100°F (38°C) may experience high temperature shutdown.

Maintenance

7.1 Overview

This section contains instructions for performing the inspection, lubrication, and maintenance procedures required to maintain the compressor in proper operating condition. The importance of performing the maintenance described herein cannot be over emphasized.

The periodic maintenance procedures to be performed on the equipment covered by this manual are listed on the following page. It should be understood that the intervals between inspections specified are maximum intervals. More frequent inspections should be made if the unit is operating in a dusty environment, in high ambient temperature, or in other unusual conditions. A planned program of periodic inspection and maintenance will help avoid premature failure and costly repairs. Daily visual inspections should become a routine.

Compressor must be shut down and completely relieved of pressure prior to checking fluid levels. Open service valve to ensure relief of system air pressure. Relieve all stored air pressure energy prior to starting machine. Failure to comply with this warning will cause damage to property and serious bodily harm.

7.2 Recommended Spare Parts List

PART NUMBER	DESCRIPTION
300005	Spin-On Oil Filter Element
304122	Spin-On Air/Oil Separator Element
309410	Air Filter Element

7.3 How To Order Parts

For technical support:

Phone: (800) 635-6587 (USA)
Phone: (219) 324-7776 (Outside USA)
Fax: (877) 254-4249 (USA)
Email: service@bossair.com
Website: http://www.bossair.com

Maintenance

7.4 Maintenance Chart

The MAINTENANCE CHART lists serviceable items on this compressor package. The items are listed according to their frequency of maintenance.

INTERVAL	REQUIRED MAINTENANCE
EVERY 10 HOURS OR DAILY	1. Check compressor oil level.
	2. Check for oil and air leaks.
	3. Check safety switches.
	4. Check compressor air filter maintenance indicator.
EVERY 50 HOURS OR WEEKLY	1. Drain liquid from compressor sump. More frequent draining may be required under high humidity conditions.
	2. Inspect compressor mounting bolts.
EVERY 500 HOURS OR 6 MONTHS	1. Change compressor oil and oil filter element.
	2. Check compressor shaft seal for leakage.
	3. Check compressor air filter connections, fittings, and clamps.
	4. Install new air filter element.
EVERY 1000 HOURS OR 1 YEAR	1. Check all door gaskets, hinges, and latches.
	2. Check airend pressure relief valve.
	3. Clean cooler fins on all coolers.
	4. Change coalescing element.

NOTICE

Compressor oil and oil filter is to be changed after the first 50 hours of operation. After this, normal intervals are to be followed.

Maintenance

7.5 Compressor Oil

It is important that the compressor oil be of a recommended type, and inspected and replaced as stated in this manual.

The combination of a coalescer element loaded with dirt and oxidized oil products together with increased air velocity as a result of this clogged condition may produce a critical point while the machine is in operation where ignition can take place and could cause a fire in the separator tank.

The following are general characteristics for a rotary screw lubricant. Due to the impossibility of establishing limits on all physical and chemical properties of lubricants which can affect their performance in the compressor over a broad range of environmental influences, the responsibility for recommending and consistently furnishing a suitable heavy duty lubricant must rest with the individual supplier if they choose not to use the recommended Boss Industries, Inc. rotary screw lubricant. The lubricant supplier's recommendation must, therefore, be based upon not only the following general characteristics, but also upon his or her own knowledge of the suitability of the recommended lubricant in helical screw type air compressors operating in the particular environment involved.

Mixing different types or brands of lubricants is not recommended due to the possibility of a dilution of the additives or a reaction between additives of different types.

Recommended Compressor Lubricant: DEXRON® III ATF

I. Specifications
   1. Flash point 400°F minimum.
   2. Pour point -40°F.
   3. Contains rust and corrosion inhibitors.
   4. Contains foam suppressors.
   5. Contains oxidation stabilizer.

Due to environmental factors, the useful life of all "extended life" lubricants may be shorter than quoted by the lubricant supplier. Boss Industries, Inc. encourages the user to closely monitor the lubricant condition and to participate in an oil analysis program with the supplier.

No lubricant, however good and/or expensive, can replace proper maintenance and attention. Select and use it wisely.

Maintenance

7.6 Compressor Oil Fill, Level, and Drain

Before adding or changing compressor oil, make sure that the compressor is completely relieved of pressure. The drain is located on the front of the machine towards the bottom of the airend. To drain the oil, remove the plug from the end of the drain. Then rotate the valve to the open position to release all of the oil from the compressor sump. When oil has been drained, rotate the valve to the closed position and reinstall the plug into the end of the drain.

Oil is added at the fill cap on the front of the machine above the sightglass. The proper oil level is in the middle of the oil sightglass when the unit is shut down and has had time to settle. The machine must be level when checking the oil. DO NOT OVERFILL. The oil capacity is given in "Compressor Specifications".

Do not attempt to drain condensate, remove the oil level fill cap, or break any connection in the air or oil system without shutting off the compressor and relieving the system of all stored air pressure.

7.7 Changing the Oil Filter

The oil filter is a spin-on type element that is easily replaced through the oil filter access panel. First, remove the oil filter access panel from the right side (by the air outlet) of the machine by removing the 4 bolts securing it. Inside the access panel will be 2 filter elements: the oil filter and the air/oil coalescer. The oil filter will be on the left side and is the smaller of the 2 filters. To remove the old element, turn it counter-clockwise until it is loose and then lift it off of the stem and out of the access panel. It is normal for this filter to drip oil when it is removed. You may need the assistance of a band wrench to remove the old element, but new elements should be installed by hand tightening only. Once the old element is out, put a film of oil on the rubber ring of the new element and place it onto the stem and turn clockwise with your hands until it is tight. The element should spin on very freely until the last full turn. Make sure the threads are engaging properly if it does not spin freely. Once the new element has been installed, reinstall the oil filter access panel using the 4 bolts that were previously removed.

Do not substitue element. Use only a Boss Industries, Inc. approved replacement element. This element is rated at 200 PSI working pressure. Use of any non-approved elements may be hazardous and could impair the performance and reliability of the compressor, possibly voiding the warranty and/or resulting in damage to property and serious bodily harm.

Maintenance

7.8 Changing the Air/Oil Coalescer

The air/oil coalescer is a spin-on type element that is easily replaced through the coalescer access panel. First, remove the coalescer access panel from the top of the machine by removing the 3 bolts securing it. Directly below the opening you will find the air/oil coalescer. To remove the old element, turn it counter-clockwise until it is loose, and then lift it off of the stem and out of the access panel. It is normal for this filter to drip oil when it is removed. If necessary, you may want to remove the oil filter access panel as well to gain better access to the air/oil coalescer. You may need the assistance of a band wrench to remove the old element, but new elements should be installed by hand tightening only. Once the old element is out, put a film of oil on the rubber ring of the new element and place it onto the stem and turn clockwise with your hands until it is tight. The element should spin on freely until the last full turn. Make sure the threads are engaging properly if it does not spin freely. Once the new element has been installed, reinstall the coalescer access panel (and the oil filter access panel if necessary) using the 3 bolts that were previously removed.

Do not substitue element. Use only a Boss Industries, Inc. approved replacement element. This element is rated at 290 PSI working pressure. Use of any non-approved elements may be hazardous and could impair the performance and reliability of the compressor, possibly voiding the warranty and/or resulting in damage to property and serious bodily harm.

7.9 Changing the Air Intake Filter

The air intake filter is a heavy-duty dry type high efficiency filter designed to protect the compressor from dust and foreign objects.

Frequency of maintenance of the filter depends on dust conditions at the operating site. The filter element must be serviced when clogged. A clogged air filter element will reduce compressor performance and cause premature wear of components.

To change the air filter element, first open the air filter access panel located on the front of the machine by turning the latch counter-clockwise and allowing the door to gently fall open. Make sure the machine is not running when you perform this or any other maintenance. Inside the access panel you will find an air filter assembly with 3 latches. Disengage each latch and pull the end cover off of the air filter assembly. Inside you will find the air filter element. Remove the air filter element by pulling and gently twisting. Install the new filter element in reverse fashion. Reinstall the air filter assembly end cover and latch all 3 latches to ensure a tight seal on the element inside. Relatch the air filter access panel in the closed position.

Do not substitue element. Use only a Boss Industries, Inc. approved replacement element. Use of any non-approved elements may be hazardous and could impair the performance and reliability of the compressor, possibly voiding the warranty and/or resulting in damage to property and serious bodily harm.

Troubleshooting

8.1 Overview

This section contains instructions for troubleshooting the equipment following a malfunction. The troubleshooting procedures to be performed on the equipment are listed below. Each symptom of trouble for a component or system is followed by a list of probable causes of the trouble and suggested procedures to be followed to eliminate the cause.

In general, the procedures listed should be performed in the order in which they are listed, although the order may be varied if the need is indicated by conditions under which the trouble occurred. In any event, the procedures that can be performed in the least amount of time and with the least amount of removal, disassembly, or parts should be performed first.

8.2 Improper Discharge Pressure

If discharge pressure is too low, check the following:

I. Too much air demand. (Air tools require more air than what the compressor can produce, air tools are free wheeling without resistance.)

II. Service valve is wide open to atmosphere.

III. Leaks in service line.

IV. Restricted compressor inlet air filter.

V. Faulty control system operation (i.e. regulator is sending a signal to close the inlet valve at all times).

If discharge pressure is too high, safety valve blows, or system shuts down on high pressure, check the following:

I. Faulty discharge pressure switchgauge or improper shutdown setting.

II. Coalescer plugged or blocked.

III. Faulty safety valve.

IV. Faulty regulator (regulator air pressure signal is not getting to inlet valve).

High pressure shutdown at compressor idle:

I. Inlet valve leaking or open.

II. Faulty regulator.

Troubleshooting

8.3 Sump Pressure Does Not Blow Down

If after the compressor is shutdown, pressure does not automatically blow down, check for:

I. Blow down valve may be inoperative (located at the inlet valve).

II. Blow down valve exhaust port plugged. Blowdown valve should have a 9/64" orifice drilled into a 1/4" pipe plug that is installed in the exhaust port.

8.4 Oil Consumption

Abnormal oil consumption or oil in service line can be caused by the following:

I. Overfilling of oil sump.

II. Leaking oil lines or oil cooler.

III. Defective coalescer element.

IV. Compressor shaft seal leakage.

V. Discharge pressure below 65 PSI or above 175 PSI.

8.5 Coalescer Plugging

If the coalescer element has to be replaced frequently because it is plugging, it is an indication that foreign material may be entering the compressor inlet or the compressor oil is breaking down.

Compressor oil can break down prematurely for a number of reasons:

I. Extreme operating temperature.

II. Negligence in draining condensate from oil sump.

III. Using the improper type of oil.

IV. Dirty oil.

8.6 High Compressor Discharge Temperature

If the compressor shuts down on high temperature, check the following:

I. Check compressor oil level. Add oil if required.

II. Clean outside of oil cooler.

III. Clean oil system (cooler) internally.

IV. Check fan switch/relay harness.

Troubleshooting

8.7 Contacting Boss Industries Inc.

If you need assistance with any of the preceding steps, or cannot find the solution to your problem, call the Boss Industries, Inc. Service Department.

Phone: (800) 635-6587 (USA)
Phone: (219) 324-7776 (Outside USA)
Fax: (877) 254-4249 (USA)
Email: service@bossair.com
Website: http://www.bossair.com

When calling for technical support, have the following information available:

- Machine Serial Number
- Description of the problem

WARRANTY SECTION

Warranty

9.1 Warranty Policy

Boss Industries, Inc. (BOSS) warrants that this Rotary Screw Compressor unit conforms to applicable drawings and specifications approved in writing by BOSS. The unit assembly will be free from defects in material and workmanship for a period of three (3) years from the date of initial operation or forty-two (42) months from the date of shipment, whichever period first expires. All other components and parts of BOSS manufacture will be free from defects in material and workmanship for a period of one (1) year from the date of initial operation or eighteen (18) months from the date of shipment, whichever period first expires. If within such period BOSS receives from the Buyer written notice of and alleged defect in or nonconformance of the unit, all other components and parts of BOSS manufacture and if in the judgment of BOSS these items do not conform or are found to be defective in material of workmanship, BOSS will at its option either, (a) furnish a Service Representative to correct defective workmanship, or (b) upon return of the item F.O.B. BOSS original shipping point, repair or replace the item or issue credit for the replacement item ordered by Buyer, (Defective material must be returned within thirty (30) days of return shipping instructions from BOSS. Failure to do so within specified time will result in forfeiture of claim), or (c) refund the full purchase price for the item without interest. Factory installed units will also include warranty on installation for a period of one (1) year. This warranty does not cover damaged caused by accident, misuse or negligence. If the compressor unit is disassembled the warranty is void. BOSS's sole responsibility and Buyer's exclusive remedy hereunder is limited to such repair, replacement, or repayment of the purchase price. Parts not of BOSS manufacture are warranted only to the extent that they are warranted by the original manufacture. BOSS shall have no responsibility for any cost or expense incurred by Buyer from inability of BOSS to repair under said warranty when such inability is beyond the control of BOSS or caused solely by Buyer.

There are no other warranties, express, statutory or implied, including those of merchantability and of fitness of purpose; nor any affirmation of fact or representation that extends beyond the description of the face hereof.

This warranty shall be void and BOSS shall have no responsibility to repair, replace, or repay the purchase price of defective or damaged parts or components resulting directly or indirectly from the use of repair or replacement parts not of BOSS manufacture or approved by BOSS or from Buyer's failure to store, install, maintain, and operate the compressor according to the recommendations contained in the Operating and Parts Manual and good engineering practice. The total responsibility of BOSS for claims, losses, liabilities or damages, whether in contract or tort, arising out of or related to its products shall not exceed the purchase price. In no event shall BOSS be liable for any special, indirect, incidental or consequential damages of any character, including, but not limited to, loss of use of productive facilities or equipment, loss of profits, property damage, expenses incurred in reliance on the performance of BOSS, or lost production, whether suffered by Buyer or any third party.

BOSS INDUSTRIES, INC.
1761 GENESIS DRIVE
LAPORTE, IN 46350
(219) 324-7776 Phone
(219) 324-7470 Fax

Warranty

9.2 Summary of Main Warranty Provisions

As claims, policies and procedures are governed by the terms of the BOSS Industries, Inc. (BOSS) warranty, it is necessary to outline some of the more important provisions.

The BOSS warranty applies only to new and unused products, which, after shipment from the factory, have not been altered, changed, repaired or mistreated in any manner whatsoever. Normal maintenance items such as lubricants and filters are not warrantable items.

Parts not of BOSS manufacture are warranted only to the extent they are warranted by the original manufacturer.

Damage resulting from abuse, neglect, misapplication or overloading of a machine, accessory or part is not covered under warranty.

Deterioration or wear occasioned by chemical and/or abrasive action or excessive heat shall not constitute defects.

Parts replacement and/or correction of defective workmanship will normally be handled by BOSS Industries, Inc. or their authorized distributor.

Failure to file a detailed warranty claim/service report for each occurrence of material defect of defective workmanship will cause warranty claim to be rejected.

Defective material must be returned within 30 days of receipt of shipping instructions. Failure to do so within specified time will result in forfeiture of claim.

The distributor is responsible for the initial investigation and write up of the warranty claim.

Distributor shall be allowed no more than 30 days from date of repair to file a warranty claim/service report.

Warranty for failure of BOSS replacement parts covers the net cost of the part only, not labor and mileage.

The BOSS warranty does not cover diagnostic calls and travel. That is time spent traveling to the machine to analyze the problem and returning with the proper tools and parts to correct the problem.

Boss will deduct from allowable credits for excess freight caused by sender failing to follow return shipping instructions.

Distributors or end-user automatically deducting the value of a warranty claim from outstanding balances due and payable to BOSS prior to receiving written notification of BOSS approval of the warranty claim may be subject to forfeiture of the entire claim.

Warranty

9.3 Warranty/Return Goods Instructions

The warranty/return procedure outlined below is provided to give the claimant the information necessary to file a warranty/return claim, and enable BOSS INDUSTRIES the ability to best serve its' customers.

Please see the following instructions to initiate a return:

Contact BOSS INDUSTRIES Returns Department by telephone at 219.324.7776 or via email at service@bossair.com. You may also send a fax at 219.324.7470.

9.4 Warranty Claims - Preparation of Parts Return

Parts returned to the factory must be properly packaged to prevent damage during shipment. Damage to a part as a result of improper handling or packing could be cause for denial. When addressing the package for shipment, the following information must be on the outside of, or tagged clearly, to the package.

1. Return Goods Authorization #.
2. Distributor or end-users return address.
3. Correct factory address.
4. Number of packages pertaining to each claim.

NOTE: *Our warranty requires that all defective parts be returned to BOSS INDUSTRIES freight prepaid. Items sent without RGA number will not be accepted. Unauthorized Returns Will Immediately Be Refused At Dock.*

9.5 Return or Warranty Claims - Filing Procedures

1. Initiate through a purchase order for warranty part or request for credit.
2. RGA will accompany replacement part.
3. BOSS INDUSTRIES will confirm disposition of failed part within 30 days of receipt and or request additional information.
4. Claim denial will result in issuance of a letter of denial.
5. BOSS INDUSTRIES will consider each claim on its' own merit and reserves the right to accept or reject claim request. In case of air-ends, these will be returned to the manufacturer for their analysis/ input.
6. Send Warranty Claim to:
   BOSS INDUSTRIES, INC.
   1761 Genesis Drive
   LaPorte, IN 46350
   Attn: Returns Dept.

Warranty

9.6 Warranty Claims Provisions

An approved claim depends on the following provision:

1. An RGA # must be issued by BOSS INDUSTRIES. (See filing procedures.)
2. Failed part must be returned within 30 days of original invoice date, freight prepaid, with RGA #.
3. Part is determined to be defective.
4. Workmanship is determined to be defective.
5. Machine is within warranty period.
6. Machine has been operated within design conditions.

Claims made through distributors must be verified by distributor prior to contacting BOSS INDUSTRIES.

9.7 Damage in Transit

Do not return damaged merchandise to BOSS INDUSTRIES, please follow claim procedure.

1. Loss in transit:
   The merchandise in our kit or provided in our factory installations has been thoroughly inspected or carefully installed and tested before leaving our plant. However, regardless of the care taken at the factory, there is a possibility that damage may occur in shipment. For this reason, it is recommended that the unit be carefully inspected for evidence of possible damage or malfunction during the first few hours of operation. Responsibility for the safe delivery of the kit or factory installed unit was assumed by the carrier at the time of shipment. Therefore, claims for loss or damage to the contents of the kit or factory installed unit should be made upon the carrier.

2. Concealed loss or damage:
   Concealed loss or damage means loss or damage, which does not become apparent until the kit is unpacked or the factory-installed unit is run by the end-user. The contents of the kit or factory installed unit may be damaged due to rough handling while in route to its destination, even thought the kit or factory installed unit shows no external damage. When the damage is discovered upon unpacking, make a written request for inspection by the carrier agent within fifteen days of delivery date. Then file a claim with the carrier since such damage is the carrier's responsibility.

   By following these instructions carefully, we guarantee our full support of your claims, to protect you against loss from concealed damage.

3. Visible Loss or Damage
   Any external evidence of loss or damage must be noted on the Freight Bill or Express Receipt, and signed by the carrier's agent. Failure to adequately describe such external evidence of loss, or damage may result in the carrier refusing to honor a damage claim. The carrier will supply the form required to file such a claim.

Warranty

9.8 Screw Compressor Airend Exchange Program

Replacement air-ends are available from the factory. For current prices and availability, contact BOSS INDUSTRIES, Inc. or an authorized BOSS INDUSTRIES distributor. Prices are F.O.B. shipping point. Prices do not include labor for removal or installation.

PARTS AND ILLUSTRATION SECTION

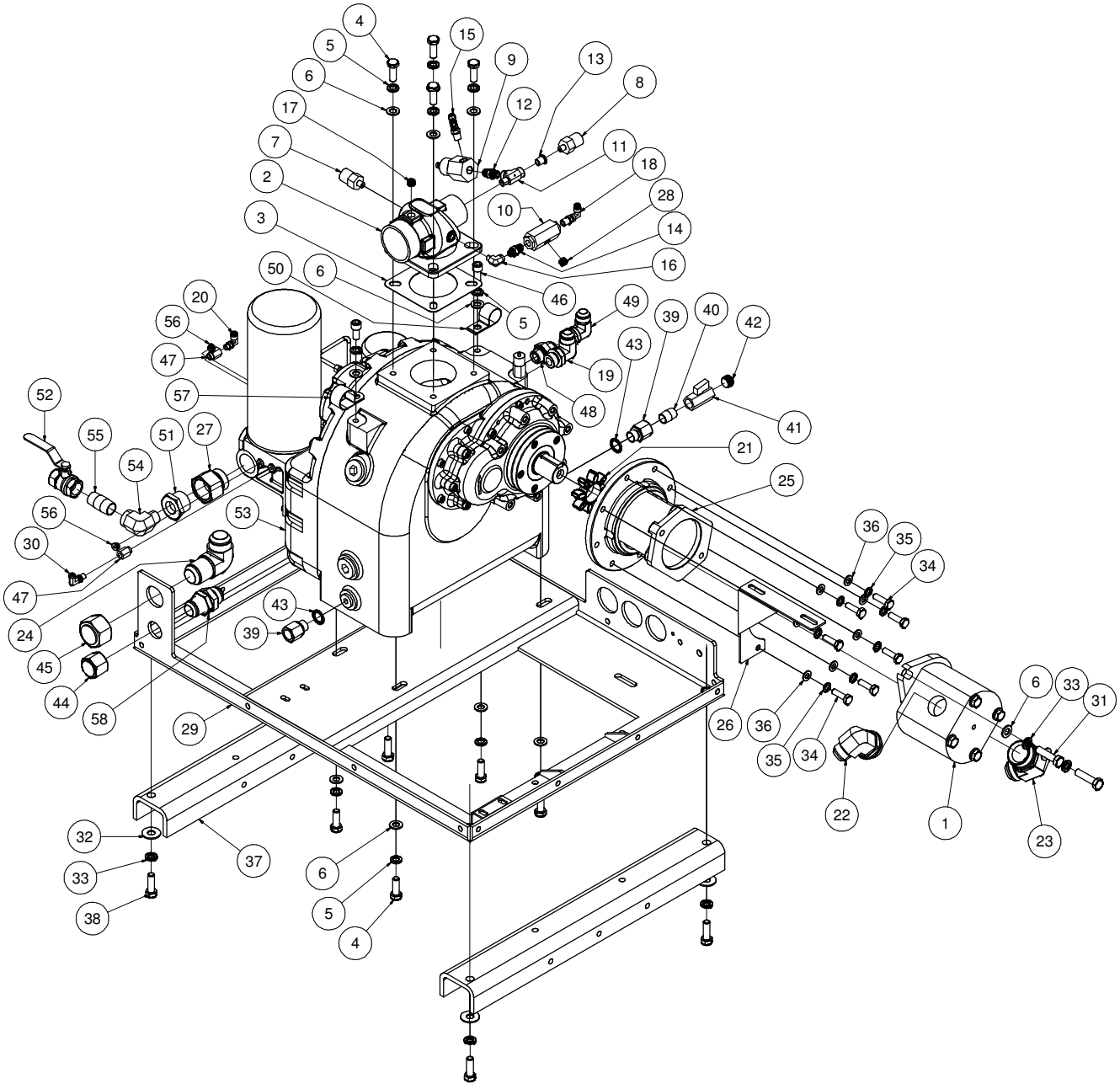
Compressor System

10.1 Compressor System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	309858	MOTOR
2	1	300629	VALVE
3	1	301694	GASKET
4	8	929212-350	BOLT
5	10	938812-250	WASHER
6	12	938912-200	WASHER
7	1	301421	SWITCH
8	1	301422	SWITCH
9	1	300057	VALVE
10	1	301827	VALVE
11	1	964804-025-MOD	TEE
12	1	960404-025	NIPPLE
13	1	907600-005	BUSHING
14	1	961604-012	NIPPLE
15	1	980804-025	TEE
16	1	960702-012	ELBOW
17	1	902915-010	PLUG
18	1	980704-025	ELBOW
19	1	970612-075	ELBOW
20	1	980704-012	ELBOW
21	1	302134	SPIDER
22	1	970416-162	ELBOW
23	1	970420-188	ELBOW
24	1	962220-125	UNION
25	1	309834	ADAPTER
26	1	309857	BRACKET
27	1	970820-125	ADAPTER
28	1	993504-141	PLUG
29	1	309847	BASE
30	1	987325-012	ELBOW
31	2	929808-200	BOLT
32	4	938208-112	WASHER
33	6	937808-125	WASHER
34	7	929210-350	BOLT
35	7	938810-220	WASHER
36	7	938910-200	WASHER
37	2	306186	BRACKET
38	4	929808-150	BOLT
39	2	970808-050	ADAPTER
40	1	922208-000	NIPPLE
41	1	302633	VALVE
42	1	902915-020	PLUG
43	2	308525	SEAL
44	1	977515-100	CAP
45	1	977515-125	CAP
46	2	929312-250	BOLT
47	2	970802-012	ADAPTER
48	1	973112-075	CONNECTOR
49	1	981612-075	ELBOW
50	1	300112	CLAMP
51	1	907605-030	BUSHING
52	1	300022-075	VALVE
53	1	309856-305	AIREND
54	1	960712-075	ELBOW
55	1	922112-020	NIPPLE
56	2	974700-012	PLUG
57	1	300111	CLAMP
58	1	962116-100	UNION

Compressor System

10.1 Compressor System (continued)

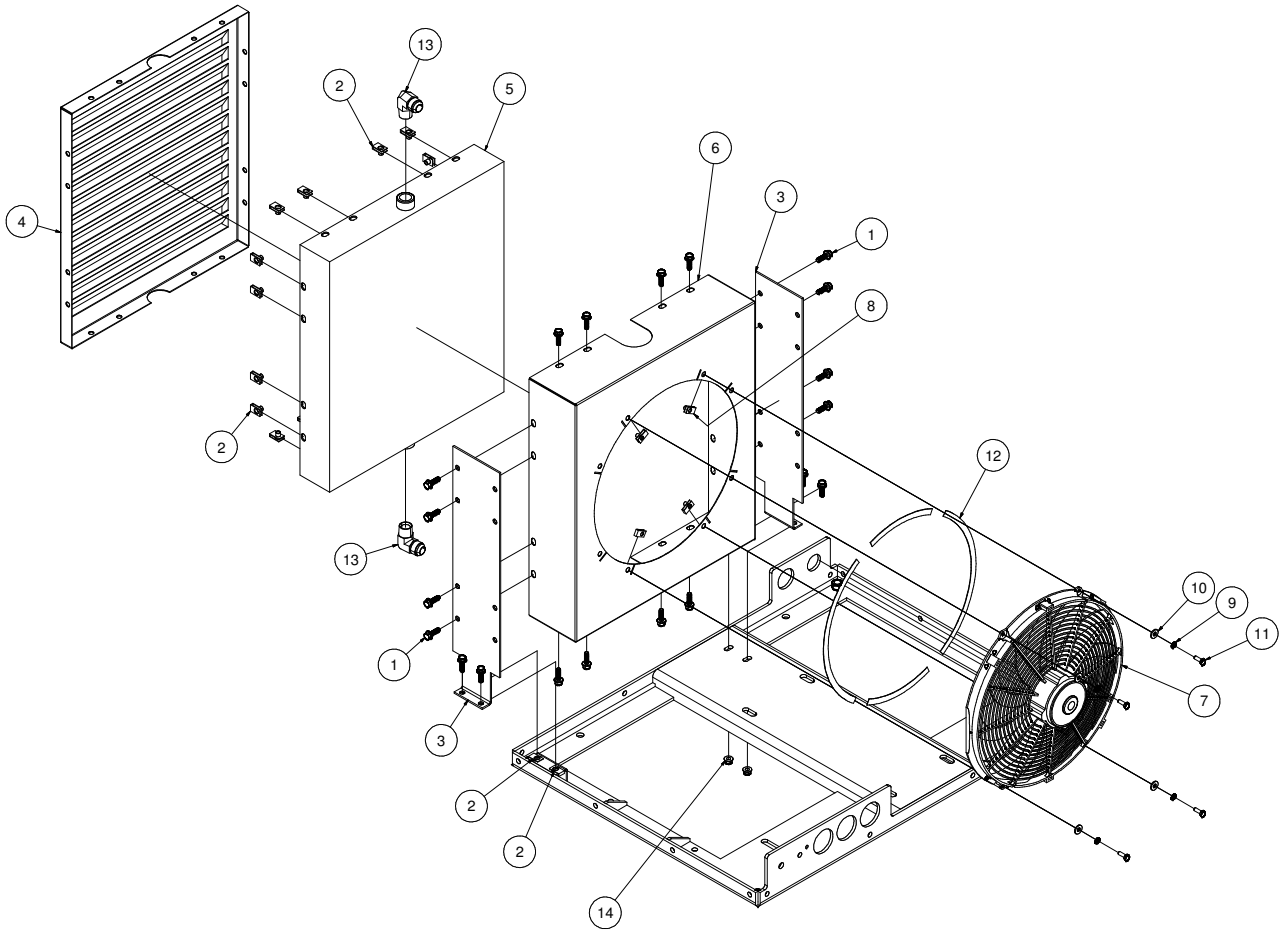


10.2 Cooler System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	20	929705-100	BOLT
2	18	961505-140	NUT
3	2	306174	BRACKET
4	1	306180	LOUVER
5	1	300014	COOLER
6	1	306159	SHROUD
7	1	302622	FAN ASSY
8	4	961504-090	NUT
9	4	938004-062	WASHER
10	4	938604-071	WASHER
11	4	929104-075	BOLT
12	4 FT	300444	TAPE
13	2	960212-075	ELBOW
14	2	925305-283	NUT

Cooler System

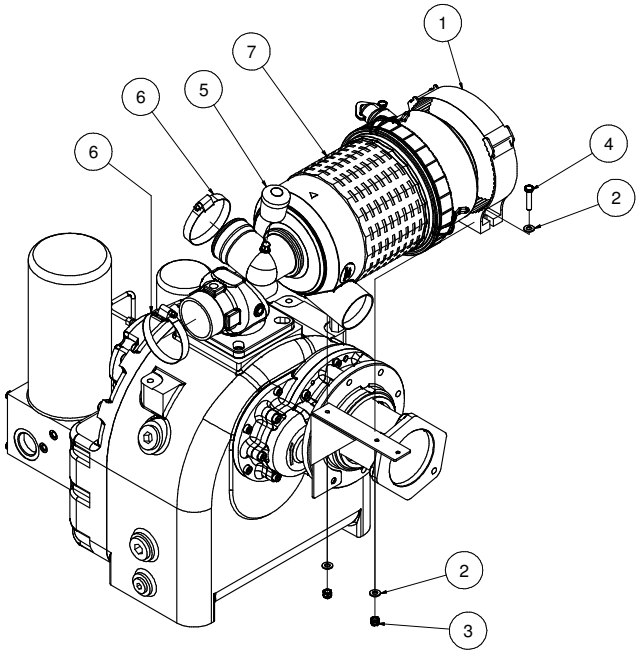
10.2 Cooler System (continued)



10.3 Air Filter System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	309414	BAND
2	4	938205-071	WASHER
3	2	925505-273	NUT
4	2	929105-150	BOLT
5	1	309415	INDICATOR
6	2	301786-300	CLAMP
7	1	309870	ASSY
NS	2 FT	301785-300	HOSE

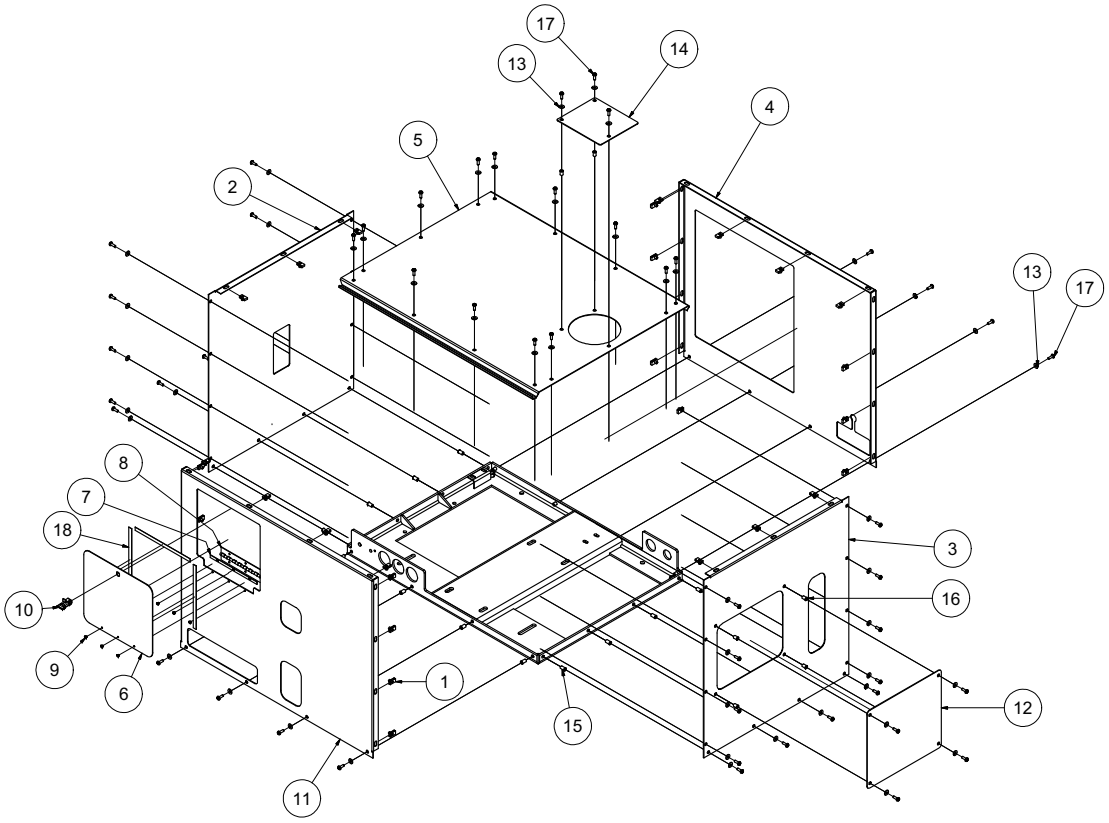
10.3 Air Filter System (continued)



10.4 Canopy System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	30	961504-090	NUT
2	1	309850	PANEL
3	1	309851	PANEL
4	1	309849	PANE
5	1	309852	PANEL
6	1	309853	PANEL
7	1	306944	SPACER
8	1	306891	HINGE
9	6	943103-025	RIVET
10	1	306943	LATCH
11	1	309848	PANEL
12	1	309854	PANEL
13	52	984004-071	WASHER
14	1	309855	PANEL
15	16	991204-260	INSERT
16	6	991204-165	INSERT
17	52	981504-075	SCREW
18	3	300444-010	TAPE

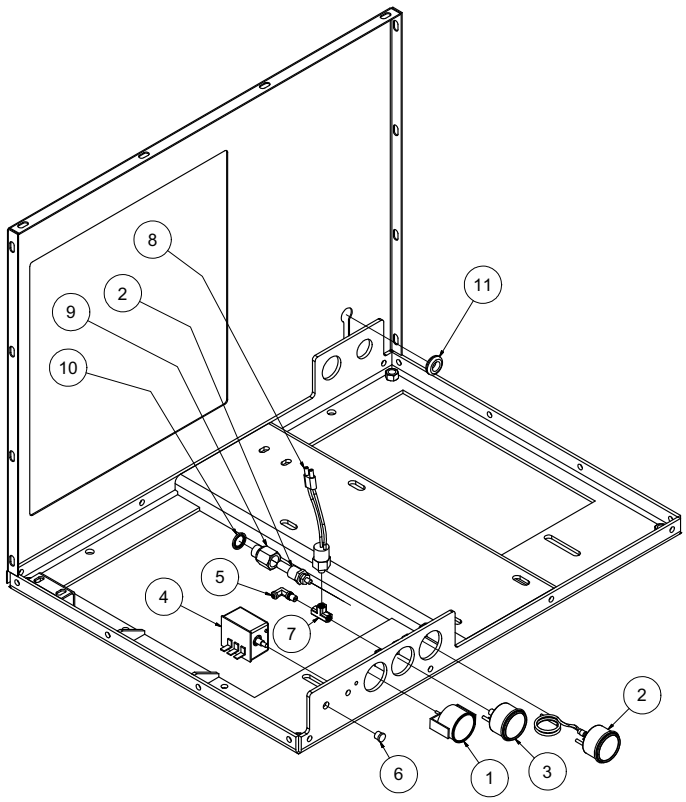
10.4 Canopy System (continued)



10.5 Electrical System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	300074	GAUGE
2	1	300076-004	SWITCHGAUGE
3	1	300075	SWITCHGAUGE
4	1	300079	SWITCH
5	1	987325-012	ELBOW
6	1	308299	PLUG
7	1	960602-012	TEE
8	1	301422	SWITCH
9	1	970808-050	ADAPTER
10	1	308525	SEAL
11	1	302011-013	GROMMET

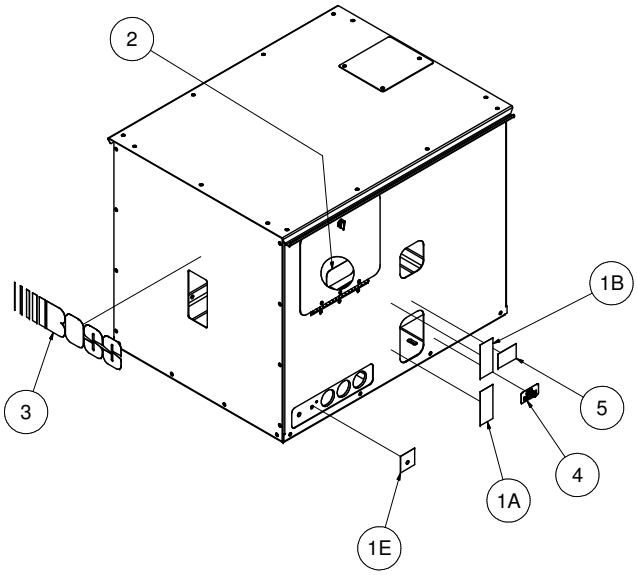
10.5 Electrical System (continued)

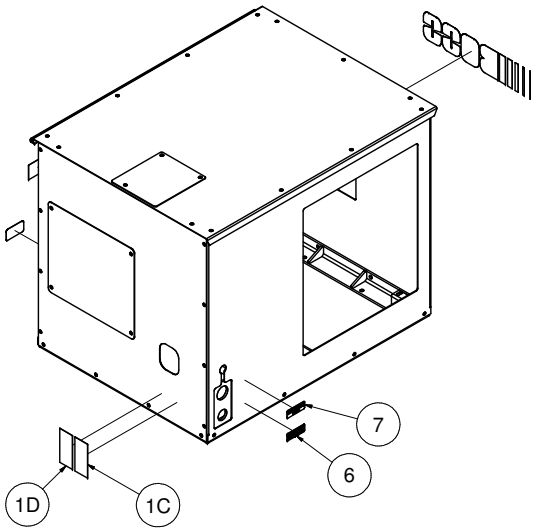


10.6 Decal System

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	302035	DECAL
1A	1	300038	DECAL
1B	1	300039	DECAL
1C	1	300040	DECAL
1D	1	300042	DECAL
1E	1	300672	DECAL
2	1	305761	DECAL
3	1	300649	DECAL
4	1	300913	DECAL
5	1	302568	DECAL
6	1	302443	DECAL
7	1	302444	DECAL

10.6 Decal System (continued)





10.7 Hose System